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Industrial Standardization

and Commercial Standards Monthly



November

(See Article on Page 261)

1938

Standards—and the Man at the Machine

STANDARDIZATION begins at the work bench.

Today the electrical equipment manufacturers, the iron and steel fabricators, radio engineers, machine tool builders, etc.—several hundred trade, technical, and governmental groups—are participating through the American Standards Association in the development of national standards *so that the man at the machine can turn out a better product at a lower cost* thereby advancing the national economy.

Every company used to develop its own standards. One firm stocked 7,500 different varieties of bed castors. Three manufacturers made common axes in 34 types, 4 grades, 35 brands, 11 finishes, and 19 sizes. But the old idea of making things “special” in order to get the business was gradually discredited. Most firms found that this course kept them out of more business than it brought.

Standardization within the company gave rise to standardization for entire industries, and to standardization on an inter-industry basis. This cut the cost of standardization to the company and increased the benefits.

The company found that through standardization it could realize substantial savings on the price of the materials that went into its product. It could do away with the waste of short runs and of stocking needless variety. Through the development of standard manufacturing practices it could increase the speed of production. It could also improve its control of quality of the goods produced. Standards for purchasing equipment led to lower maintenance costs and fewer breakdowns. Safety standards cut the cost of accident protection.

All of these economies the manufacturer has been able to pass on to the consumer in terms of lower price.

That is why some 2,000 companies annually renew their membership in the American Standards Association, providing for their staff engineers and executives a constant contact with standardization activities and the practical application of standards in industry.

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RUTH E. MASON, *Editor*

This Issue

Our Front Cover: Committee to develop building code requirements for the use of wood is authorized by American Standards Association. Photograph by Brown Bros.

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**Standardization is dynamic, not static. It means
not to stand still, but to move forward together.**

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How Mineral-Wool-Filled Partitions Respond to Fire-Resistance Tests

National Bureau of Standards Uses American Standard Specifications for Fire Tests to Determine Relative Value of Different Methods of Filling Wood Partitions with Mineral-Wool for Fire Protection

TESTS to determine the fire resistance of wood-framed partitions which have the space between the studs and the facings filled with mineral wool were carried out recently by the National Bureau of Standards. Results of the test, it is expected, will be used to increase the fire resistance of such partitions without changing the material or thickness of the facings.

The tests indicated that the filling of wood-stud partitions results in a substantial increase in fire resistance, although care must be taken to avoid uneven filling. Some of the methods of filling used in these experiments, it was found, left spaces through which the fire spread to the unexposed side of the partition.

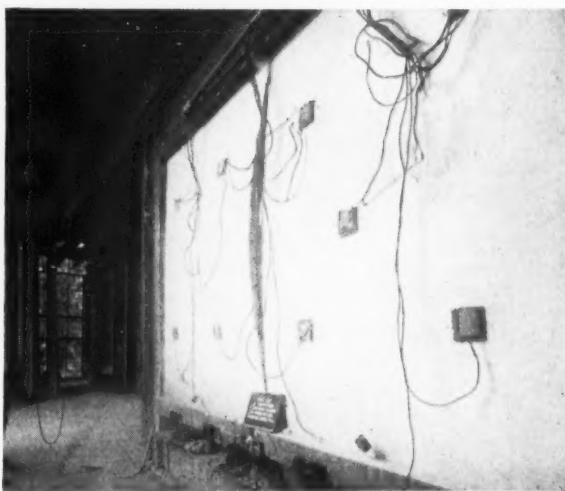
The tests were carried out in accordance with the American Standard Specifications for Fire Tests of Building Construction and Materials (ASA A2-1934; A.S.T.M. C19-33).

For the tests, the partitions were built into movable frames and were placed to form one wall of the furnace chamber. Most of the partitions were tested under load for endurance against fire. Fire and hose stream tests were carried out with those constructions that withstood the fire endurance test for one hour or more, and which met the requirements for that length of time.

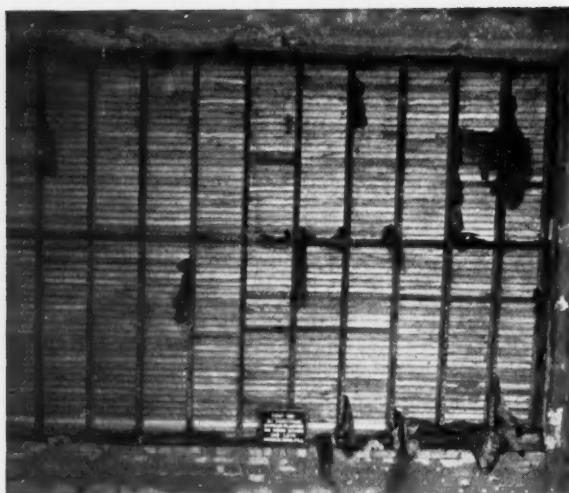
A summary of the results, reported by $\frac{1}{4}$ hour intervals, is shown in the table.

Results for the nonbearing classification are based on ability to prevent an average temperature rise of 250 F on the side not exposed to the fire, or a rise of 325 F at any point, to prevent the passage of flame, and to prevent ignition of cotton waste placed against the unexposed side. Results for the bearing classification are based on all these criteria with the addition of a requirement that the partition must have the ability to sustain a design load of 358 lb per square inch of the net area of the wood studs for the period of exposure to the fire.

In the first two tests shown in the table, the loose rock wool was dropped into the stud space in a height of 4 ft. It was tamped with a sash weight in the case of the first test, and lightly packed with a stick for the second. Both these tests failed because boards on the unexposed side were ignited at points where there were voids in the fill. The results in these two cases differed little from results obtained with a similar partition which had not been filled. In the third



Wood stud partition faced with gypsum wall board and filled between studs with mineral wool bats after exposure of the opposite face to the test fire



Wood stud partition faced with gypsum plaster on wood lath and filled with mineral wool, after ½ hour exposure to fire and two minutes 24 seconds application of a fire-hose stream

test the fill was placed progressively as the facing was applied, resulting in a fill of more uniform density.

For the partition faced with lime plaster on wood lath, the fill was placed by pneumatic means after the partition was built and aged, the equipment used being typical of those applied in placing wall and attic insulations. Apparently in this case also the failure was at a void or sparsely filled location in the fill. The partition, however, withstood the test for 16 minutes longer

than a similar unfilled partition. Some additional tests with wood lath and plaster partitions with mineral wool fill in bat form are now in progress.

The mineral and glass wool bats applied as fill in the remaining tests were of the usual wall-thick types used for house insulation, with waterproofed paper on one side. They were 15 inches wide and 23 to 48 inches long, and were placed against one facing for the full height of the partition before the other facing was applied. Where secured by nailing, 8d finishing nails were driven on 12 inch centers through both ends of the bats into the middle of the sides of the studs. The densities given apply for the nominal area of the bats. As compressed into the stud space the density would be about 10 per cent higher, or equivalent to about 2.2 lb per cubic foot for glass wool and 3.6 to 4.7 lb per cubic foot for rock and slag wool.

The filling increased the fire resistance of the construction with the ½ inch gypsum board facing by 10 to 20 minutes, for that of gypsum plaster on wood lath by 25 to 30 minutes, and for those of gypsum plaster on metal lath by about 30 minutes. The proportions given in the table for the plaster mix are in terms of weight of gypsum plaster or dry hydrated lime to dry weight of sand. Where two ratios are given, the first is for the scratch coat and the other for the brown coat. The Potomac River sand used has a high content of quartz and chert. Where a white finish was applied, its thickness is included in the given thickness of facing.

The tests indicate that the filling of wood-stud partitions results in a substantial increase in fire

Results of Fire Tests of Wood-Stud Partitions Filled With Mineral Wool

Material	Facings		Filling		Fire-endurance period	
	Thickness of plaster or board	Plaster mix	Form	Density	Bearing	Non-bearing
	Inch			Lb/in ³	Hr	Hr
T & G 3-in. wood ceiling boards	3	—	Bulk, tamped	6.9	¾	¾
“ “	3	—	Bulk, loose	2.7	¾	¾
“ “	3	—	Bulk, hand-packed .	2.6	½	½
Wood lath, lime plaster	1½	{ 1:5 1:7½	{ Pellets, blown in . .	2.2	—	¾
Gypsum board	½	—	Bats, not nailed . .	0.6 to 1.2	¾	1
“ “	½	—	Bats, nailed6 to 1.2	1	1
Wood lath, gypsum plaster	1½	{ 1:2 1:3	{ Bats, not nailed . .	1.0 to 1.3	1	1
“ “	1½	{ 1:2 1:3	{ Bats, nailed	1.0 to 1.3	1	1
Metal lath, gypsum plaster	¾	1:2	Bats, ¾ nailed	1.0 to 1.3	1½	1½
“ “	¾	1:1	“ “	1.0 to 1.3	1½	1½

resistance. The filling apparently retards the transmission of heat to the unexposed facing and decreases the rate of burning of the wood supports. The results indicate that care is needed to obtain a fill without voids. Apparently this condition is more often attained with fills in bat form placed before the last facing is applied than with fills placed after both facings are in place. The former method also affords opportunity for inspection. Even with this type of construction,

however, care must be exercised if results comparable to the ones given here are to be obtained. The truth of this is brought out in cases where the facing on the side exposed to fire disintegrates or falls off relatively early in the test. Then, if the filling has been nailed in place, or held by equivalent means, added fire resistance is obtained. This is true, although to a less extent, even if the facing on the side exposed to the fire does not fall off or disintegrate.

C.E.S.A. Annual Meeting Reports 12 New Standards

Sixty members of the Canadian Engineering Standards Association from various parts of Canada, as far west as Vancouver, attended the seventeenth annual meeting of the Association September 15.

During the year twelve new standards were published by the C.E.S.A., it was reported, and some 125 committees are now working on standardization projects.

Work is being undertaken by the Association on new standards for fire tests on building construction and materials; specifications for several types of water and sanitary pipe; and specifications for brick, building blocks, and mortar materials. The Association is also considering the adoption of a Safety Code for Mechanical Refrigeration, and a committee has been organized to prepare a standard specification for aluminum cable, the first meeting to be in April, 1939.

The Safety Code for Passenger and Freight Elevators, which was completed recently, will be published in April, it was announced.

Standards now being prepared and which are nearing completion cover specifications for Portland cement; logging chains; galvanized steel wire strand; identification of piping systems; paper-insulated lead-covered cable; tungsten incandescent lamps; reinforcing materials for concrete (on which several standards on this subject have been completed and are ready for publication); and structural welding.

NFPA Asks Approval of Revisions On Air Conditioning Regulations

Revisions to increase the effectiveness of safety requirements for air conditioning installations both in residences and in other buildings have been submitted by the National Fire Protection Association to the American Standards Association for approval.

For air conditioning systems in buildings other than residences the changes call special attention to the fact that combustible coverings or combustible exterior insulations to ducts are not recommended. They also provide for the number of cleanout openings to facilitate the cleaning of return ducts, and for the use of fixtures of the vaportight type for lamps within the conditioning system. Revisions are also made in the requirements for fire dampers, and for location of air inlet and outlet openings.

For residential air conditioning systems the changes include revisions in the requirements for the temperature at which the automatic device may be set, and for limiting the average temperature of the air at the beginning of the main duct.

It is expected that the revised standard, Regulations for the Installation of Air Conditioning, Warm Air Heating or Cooling, and Ventilating Systems (Z33.2-1938) will be sent to letter ballot of the Standards Council soon.

Standards Simplify Industrial Procedure

"The advancing mechanization associated with trade and industry, indeed with the whole of social organization, is making demands upon the engineers that cannot be met except by a corresponding increase in the application of the standards principle to their activity. Standards, by predefining dimensions, patterns, strengths, methods of test, construction, and installation, and all related factors and considerations, greatly simplify the complexity of the procedure of designing, manufacturing, installation, and operation." — *Second Annual Report, New Zealand Standards Institute.*

Two New Commercial Standards Provide For Marking Gold and Platinum Articles

BENEFITS resulting to both buyers and sellers from the Commercial Standard for Marking Gold-Filled and Rolled-Gold Plate Articles, brought a request to the National Bureau of Standards in 1937 for the establishment of two more commercial standards for marking gold and platinum articles. The National Bureau of Standards reports that these two standards have now been completed and are effective for new production. They are the Commercial Standard for Marking Articles Made Wholly or in Part of Platinum, CS 66-38, effective June 20, 1938, and the Commercial Standard for Marking Articles Made of Karat Gold, CS 67-38, effective November 25, 1938.

The standard for marking articles made of platinum provides methods for proper identification of alloys containing only platinum and also alloys containing iridium, palladium, ruthenium, rhodium, and osmium associated with platinum.

The standard on karat gold defines a "Karat" as 1/24th part by weight of the metallic element gold in an article. For example, "10 Kt" or 10 Karat Gold" means that the metallic element gold contained in the article constitutes 10/24ths by weight of the entire article. "Karat Gold" according to the standard must not be less than 10 karat fineness. Gold of 24 karat quality is defined as "Fine Gold." The term "Solid gold" may only be applied to fine gold. No gold article of less than 10 karat fineness or with a hollow center filled with some substance other than gold shall be marked with a quality mark, the standard provides.

The Advisory Committee on Ultimate Consumer Goods considered the Commercial Standard for Marking Articles Made of Karat Gold at its

Use of standard markings, promulgated by the National Bureau of Standards, will give consumer definite information on quality of gold and platinum articles purchased.

meeting September 22. As a result of its recommendations, steps are now being taken to determine whether or not the manufacturing groups concerned would be interested in submitting this standard for approval by the American Standards Association. Two standards in this field—the Commercial Standards for Marking of Gold-Filled and Rolled-Gold Plate Articles Other Than Watchcases, CS47-34, and the Commercial Standard for Marking Articles Made of Silver in Combination with Gold, CS51-35—have already been approved by the ASA. The first standard, the Commercial Standard for marking gold-filled and rolled-gold plate articles, has now been revised and the revision is being circulated to the industry for acceptance. The revision was recommended by the New England Manufacturing Jewelers and Silversmiths Association, and was endorsed by the Standing Committee of the industry, working under the procedure of the National Bureau of Standards. Copies of the proposed revision, TS-2572, dated November 2, 1938, are available from the ASA office or from the National Bureau of Standards.

Committee Starts Work on Code For Electroplating Ventilation

A code for ventilation in electroplating operations which would protect the health of workers from injurious mists, vapors, or liquids is being planned by a subcommittee of the ASA Exhaust Code Committee. Only electroplating operations such as those with chromium, cadmium, lead, or with any metals from cyanide solutions, and anodizing of metals will be covered.

The plan is to classify the principal operations

into groups according to hazards, and define the type and degree of ventilation necessary for each group, rather than attempting to specify threshold limits or exact degrees of ventilation for each process or operation.

A questionnaire is now being sent out to electroplating companies to find out how they are solving these problems now and what results they are obtaining in eliminating the hazards. Answers to the questionnaire will be used by the committee in deciding how to proceed in developing the proposed safety code for electroplating.

ASA Initiates Building Projects For Wood and Outdoor Signs

FOLLOWING favorable recommendation by the Building Code Correlating Committee, two additional projects in the building code field were authorized by the Standards Council of the American Standards Association at its September meeting. The new projects will deal with building code requirements for signs and billboards and building code requirements for wood.

The project on building code requirements for wood has been under consideration for some time by the BCCC. Formal request for initiation of the project has been delayed, however, until the organizations which seemed best to represent the research and production points of view of the industry could devote their attention to this matter. The problem is considered by both the Forest Products Laboratory and the National Lumber Manufacturers Association, which have accepted the sponsorship of the project, as of particular importance to the industry.

Cooperate with Committee on Stresses

The sectional committee, which it is expected will be organized soon, will develop recommendations governing the use of wood in building construction and will establish, in cooperation with the Advisory Committee on Working Stresses, suitable working stresses for the commonly used species.

For the project on signs and billboards, the American Municipal Association and the Outdoor Advertising Association of America have accepted the administrative leadership. The sectional committee which will be organized under the leadership of these two organizations will consider matters pertaining to safety in construction in the erection and maintenance of permanent and temporary signs and billboards. It will deal with engineering requirements necessary to ensure safety to workmen and the public, but it will not concern itself with aesthetic considerations or matters of appearance and geographical location of signs. These are believed to be matters which properly come within the scope of other regulations. Recommendations issuing from this committee are intended to apply only to signs and billboards in those localities where such structures would be regulated through building code requirements.

Organization of the sectional committee to consider this subject will proceed soon, it is expected.

The addition of these recently approved projects

substantially rounds out the building code program. A total of twelve new projects in this field have thus far been authorized by the Standards Council, and two existing projects have been brought into closer relation to the program through transfer to the supervision of the Building Code Correlating Committee. Save for one or two minor gaps, the work originally contemplated in the BCCC program may be said to be under way.

Reports received at the meeting of the Executive Committee of the BCCC, held on October 27, indicate that substantial progress is being made on the program as a whole. Drafts of recommendations, some of which are approaching final form, have been circulated by several of the sectional committees. In others, the preparation of preliminary drafts of standards is well under way, it is reported.

Meetings of two sectional committees were held in New York in October. The Sectional Committee on Administrative Requirements for Building Codes met to consider comments which had been received on the second tentative draft of proposed requirements. An organization meeting of the recently authorized Sectional Committee on Minimum Design Loads in Buildings was held at which plans were laid for carrying on the work. A number of subcommittees were established to develop different phases of the subject.

Formal approval of the personnel of the Sectional Committees on Building Code Requirements and Good Practice Recommendations for Masonry, and Administrative Requirements for Building Codes was voted by the Standards Council at its September meeting.

Our Front Cover

A representative committee to work out building code requirements for the use of wood is now being organized under ASA procedure.

The American Standards Association already has a project on safety requirements for the construction industry which should help to eliminate many of the unsafe practices evident in this cover picture.

Radio Industry Uses Preferred Numbers

IT is basic to the principle of preferred numbers that in any work of designing there are many cases in which the designer has latitude in choice of dimensions ratings or other constants so that his decisions with respect to the numerical values are quite arbitrary within certain and frequently extremely wide limits. It will be obvious that if certain numerical values are universally accepted as "preferred" and are used whenever they meet the requirements at least as well as any other arbitrary choices, the consequent uniformity of choices will almost inevitably later result in sim-

The American Standard on Preferred Numbers, approved by the ASA in 1936, serves the radio engineer as a valuable tool in selecting dimensions for his designs

plications and usefulness which may, indeed, not even have been in mind in the original making of the choice.

Thus, such advantages and savings as the following may be expected to result from the consistent and general use of preferred numbers.

1. Component materials or parts can be made with a minimum number of standard sizes, ratings, or other characteristics so chosen to meet all of the rational needs of their users and especially to meet the needs of those who, themselves, have adopted preferred numbers in connection with their products.

2. Measuring equipment and production machinery can be simplified and cheapened, because it becomes necessary to provide only for a definite, limited number of preferred values of dimensions or other characteristics.

3. Odd sizes, manufactured through ignorance of real requirements or to meet the supposed, but really illogical, needs of a customer or industry, can be eliminated.

4. Operations become simpler for both producers and users, because calculation, manufacture, commerce, catalogs, price lists, and human memory deal only with certain easily memorized and widely used numerals.

A strikingly effective example of the use of preferred numbers and one which has been in use for seventy years, is the Brown and Sharpe wire gauge. The basis of its size variations is that of a geometric progression giving each increasing size a diameter greater than the preceding one by a constant percentage. It is possible that the popularity of this gauge is in large measure due to the utility inherent in the preferred number idea of which it has been for so many years so successful an ex-

Basic Preferred Numbers—Decimal Series (10 to 100)

5 Series 60% Steps 10	10 Series 25% Steps 10	20 Series 12% Steps 10	40 Series 6% Steps 10
		11.2	10.6
	12.5	12.5	11.2
		14	11.8
16	16	16	12.5
	20	18	13.2
		20	14
	25	22.4	15
		25	16
25	25	28	17
	31.5	31.5	18
		35.5	19
	40	40	20
		45	21.2
	50	50	22.4
		56	23.6
	63	63	25
		71	26.5
	80	80	28
		90	30
			31.5
			33.5
			35.5
			37.5
			40
			42.5
			45
			47.5
			50
			53
			56
			60
			63
			67
			71
			75
			80
			85
			90
			95

Preferred numbers below 10 are formed by dividing the numbers between 10 and 100 by 10, 100, etc.

Preferred numbers above 100 are correspondingly formed by multiplying the numbers between 10 and 100 by 10, 100, etc.

Percentage steps in headings are approximate averages.

¹Abstract of article "Preferred Numbers and the Radio Industry," by Arthur Van Dyck, Radio Corporation of America, published in the *RMA Engineer*, May, 1938.

ponent. The system is nothing more than an intelligent method of selecting sizes so as to afford the greatest utility and convenience, and to cover the full range with the minimum number of sizes.

For about fifteen years past, various organizations in this country, interested in industrial standardization, have been working to develop a system of preferred numbers which would be suited to effective utilization by all American industry. Under the procedure of the American Standards Association a system has now been developed which is thought suitable for wide application and which, in part, is given in the table below:

Comprise Geometric Series

While it is by no means important to the application of preferred numbers to the specific problems of industry it may be of interest to the engineer to note that any series of preferred numbers should comprise a geometric series: *i.e.*, each succeeding number should be a fixed ratio with respect to the preceding number and it thus follows that the multiplying factor there involved is some root of the ratio of the first and last numbers in the series.

Thus, in the American Standard system of preferred numbers which is finding wide application in American industry, only one decade of which is shown above, the range of numbers is between 10 and 100 and in this range four series have been formulated; the "coarsest" being the 5 series, in which there are five preferred numbers between 10 and including 100 and, of course, each succeeding number is equal to the product of the preceding number and the fifth root of ten. Similarly formed series of increasing "fineness" have been formulated and are given in the table up to the 40 series which is doubtless as "fine" as any series of preferred numbers need be for the purposes of industry and certainly as fine as any series need be for ready application to the radio industry.

Same as Wire Tables

To the radio engineer it will be of special interest to note that notwithstanding the fact that the mathematical relations basic to the Brown and Sharpe system of wire gauges are based on the doubling of the diameter of the wire for each increase of six sizes and hence each succeeding wire diameter is greater than the preceding one by a ratio equal to the sixth root of two, the 20 series of the American Standard system of preferred numbers is substantially identical with the set of wire tables that every radio engineer has conveniently at hand. The especial importance of this lies in the fact that as the radio engineer finds increasingly frequent application for the American

"Preferred Numbers" Applications to W. E. & M. Co.'s Designs, Parts & Materials

SUBJECT	DESIGN	PREF. NO.	SERIES
Fits and Tolerances—			
Ranges of shaft dias. on which			
shaft fits are based	10 & 20		Decimal
Ampere Ratings, Grid glow tubes			
.015—.1—.64—2.5—4—10—25 . .	5		"
Armature Bores	40		"
Armature Outside Diameter	40		"
Stator Punchings Outside Diameter	40		"
Insulation Washers Inside Diameter	20 & 40		"
Outside Diameter	40		"
Gear Ratios	20		"
Mounting Dimensions of Electric			
Motors N.E.M.A.	20		Fraction
(Dimensions A—E—D—O)			

SUBJECT	PARTS	PREF. NO.	SERIES
Bolts:			
Hex. Hd.—Diameters	10 & 20		Fraction
Hex. Hd.—Lengths	10—20—40		"
Square Hd.—Diameters	10 & 20		"
Square Hd.—Lengths	10—20—40		"
Cap Screws—Lengths	10—20—40		"
Drive Screws—Lengths	10		"
Machine Screws—Lengths	10—20—40		"
Headless Set Screws—Lengths . .	10		"
Safety Set Screw—Diameters . . .	10		"
—Lengths	10—20—40		"
Sq. Hd. Set Screw—Diameters . .	10		"
Sq. Hd. Set Screws—Lengths . . .	10—20—40		"
Wood Screws—Lengths	10—20		"
Spacer, Steel—Diameter and Lengths	10 & 20		"
Stud, Steel—Diameter	10		"
—Lengths	20 & 40		"
Washers, Plain	10 & 20		"

SUBJECT	RAW MATERIALS	PREF. NO.	SERIES
Ins. Tube Mandrels—Diameters . .	20—40—80		Fraction
Micarta Plate Tks.	10—20		"
Micarta Angles, Channels, Bars . .	10—20		"
Steel Bar:			
CR—Round	10—20—40		"
CR—Rect. Thickness	10—20		"
HR—Rect. Thickness	10—20		"
HR—Rect. Width	10—20—40		"

Standard system of preferred numbers to his product he need only refer to his ever present wire tables for the preferred values that will make his choice of constants quite consonant with that of all American industry.

Typical of this kind of industrial application of preferred numbers are the applications made by the Westinghouse Electric and Manufacturing Company to sizes of stock parts, raw materials stock sizes and the like. There follows a list of a number of applications now in common use by that company; the preferred number series referred to are, of course, those given above:

American Standard for Gypsum Plastering Is First in Proposed Plastering Series

THE first of a series of standard specifications for plastering was completed recently when the American Standard Specifications for Gypsum Plastering, Including Requirements for Lathing, were approved by the American Standards Association.

The work on plastering specifications was started by the ASA in 1929. At first it was limited to interior plastering only, but it was soon extended to include exterior plastering as well. As the work developed, it was found that it would be difficult to develop specifications simultaneously for all types of plastering. Plans were made, therefore, for developing specifications for cement plastering, interior and exterior; specifications for gypsum plastering; and specifications for lime plastering; as well as specifications for other types of plastering which may be needed from time to time.

The new standard specifications for gypsum plastering have been given wide circulation, several editions of the standard having been distributed by the Gypsum Association.

General requirements for plastering, including requirements for sand, drying, and plastering on monolithic concrete surfaces, specifications for gypsum plastering, and specifications for lathing make up the standard. Materials for gypsum plastering are required to meet the provisions of des-

ignated standards of the American Society for Testing Materials. Proportions for various types of gypsum plaster, and specific instructions for mixing and preparing various types of mixes are included, as well as instructions for finishes, different thicknesses of plaster on different bases, and for applying the plaster to different types of bases. Specific requirements for lathing, including exact measurements for various types of lath, minimum weights per square yard in pounds, and requirements for applying lath are given in the section on specifications for lathing.

The standard, which has been given the ASA designation A42.1-1938, is being prepared for printing and copies will be available in about two months.

Following its policy of developing specifications for plastering made of various materials, the Sectional Committee on Plastering is now considering a second draft of proposed specifications for Portland stucco and Portland cement plaster. The first draft was considered in a meeting of the committee in May, 1938, and the second draft is now being voted upon by letter ballot of the committee.

This work on plastering is going forward under the administrative leadership of the American Institute of Architects and the American Society for Testing Materials.

A.S.T.M. Publishes 1938 Edition Of Standards for Textiles

The 52 specifications, test methods, and definitions for textile materials, prepared by Committee D-13 on Textile Materials of the American Society for Testing Materials, have been issued in the 1938 edition of the "A.S.T.M. Standards on Textile Materials." This edition includes for the first time standards covering the fastness to light of colored fabrics, single-ply bleached broadcloth, bleached wide cotton sheeting, terry toweling, spun rayon yarns and threads, fiber length of wool, and wool yarns mixed with other fibers.

In addition to the standards, the book includes a psychrometric table for relative humidity which combines both accuracy and convenience, 43 photomicrographs of common textile fibers, a yarn number conversion table, and a glossary of textile terms. Several proposed test methods are given for information and comment.

Copies of the 330-page publication are available from the American Society for Testing Materials, 260 S. Broad Street, Philadelphia, at \$2.00 each.

National Bureau of Standards To Study Gas Instruments

A study of the instruments available to the gas industry for determining, indicating, or recording the specific gravity of fuel gases is being undertaken by the National Bureau of Standards at the request of Committee D-3 of the American Society for Testing Materials. The tests will include determination of accuracy, reproducibility, sensitivity, and other operating characteristics. Approximately a dozen instruments of different types have already been received at the Bureau from a number of cooperating manufacturers, and the tests are expected to start soon after December 1.

New A.S.T.M. Standards Include Metals, Lime, Rubber, Textiles

SEVERAL new standards and a number of existing standards and test methods have just been approved by the American Society for Testing Materials through its Committee E-10 on Standards. This Committee acts for the Society in reviewing recommendations of standing committees in intervals between annual meetings of the A.S.T.M.

New tentative specifications to replace immediately the standard covering Lap-Welded and Seamless Steel and Lap-Welded Iron Boiler Tubes were approved as the result of the work done by Committee A-1 on Steel. This new tentative specification (A 83-38 T) proposes to designate wall thicknesses by decimals in place of Bwg and fractions and to indicate permissible variations for wall thicknesses and weight in percentages rather than by the existing dual system.

The former grade of medium carbon material was deleted and new tentative specifications for medium carbon seamless steel boiler tubes were approved. The demand for recognized standardized requirements for carbon-molybdenum seamless steel boiler and superheater tubes resulted in new tentative specifications for this material.

A new specification (A 211-38 T) has been issued covering spiral welded steel or iron pipe 4 in. to 48 in. in diameter, inclusive, with wall thickness from 1/16 in. to 11/64 in. manufactured by the following electric-fusion-welded processes: spiral lap-welded joint, spiral lock seam welded joint, or spiral butt welded joint.

In order to cover spiral welded material greater than 3/16 in. in thickness, tentative revisions are being published in two existing specifications covering electric-fusion-welded steel pipe of sizes from 8 in. to 30 in. and sizes 30 in. and over.

Extensive Changes on Alloys

A complete review by Committee A-9 on Ferro-Alloys of nine existing specifications resulted in a number of extensive changes and reissue in the form of new tentative standards. The committee believes that the new specifications are truly representative of current commercial requirements. They cover: Spiegeleisen, ferromanganese, ferrosilicon, ferrochromium, ferrovanadium, molyb-

denum salts and compounds, ferromolybdenum, low-carbon ferromolybdenum and ferrotungsten.

To meet the demand for standard requirements for electrolytic cathode copper, new tentative specifications (B 115-38 T) for this material were approved at the request of Committee B-2 on Non-Ferrous Metals and Alloys. The quality requirements provide that the copper shall have a minimum purity of 99.90 per cent, the silver being counted as copper. The copper is to have a resistivity not to exceed 0.15436 international ohms per metergram at 20 C (annealed), the resistivity to be determined from a representative sample of each carload, or 50 tons, as a lot.

New Lime Standards

For several years, Committee C-7 on Lime has been developing standardized requirements for hydraulic hydrated lime. New tentative specifications are now being issued under the designation C 141-38 T. Two types of lime are covered: high calcium lime (containing not more than 5 per cent magnesium oxide) and magnesium lime (containing more than 5 per cent magnesium oxide). Hydraulic lime is defined in the specification as "the hydrated dry cementitious product obtained by calcining a limestone containing silica and alumina to a temperature short of incipient fusion so as to form sufficient free lime (CaO) to permit hydration and at the same time leaving unhydrated sufficient calcium silicates to give the dry powder meeting the requirements herein stated its hydraulic properties." It is indicated that this lime may be used for scratch or brown coat of plaster, for stucco, for mortar, and as sole cementitious material in concrete, or in portland cement concrete either as blend, amendment, or admixture.

Because specifications for aggregate for concrete ordinarily include a limitation on clay lumps, Committee C-9 on Concrete and Concrete Aggregates has developed a test method for determining the amount of lumps in aggregate (C 142-38 T). This is a necessary complement to the existing specifications covering concrete aggregates (C 33-37 T). Requirements are given for taking the sample and this is then to be spread in a thin layer on the bottom of the container and

examined for clay lumps. Any particles which can be broken into finely divided particles with the fingers shall be classified as clay lumps. After all discernible clay lumps have been broken, the residue from the clay lumps is to be removed by use of sieves, which are specified. The percentage of clay lumps is then calculated to the nearest 0.1 per cent in accordance with a given formula.

The use of asphalt plank and consistent demands for standardized specification requirements led Committee D-4 on Road and Paving Materials to begin study several years ago of this material. This has just resulted in new specifications (D 517-38 T) covering plank of two types as used for bridge floors; namely, plain and mineral-surfaced. The plank is defined as a mixture of asphalt, fiber, and mineral aggregate formed by extrusion under sufficient pressure to expel the air and form a dense mass. The requirements in the specifications cover mineral filler, dimensions, absorption (not to exceed 1.0 per cent by weight), brittleness, and indentation. Procedures are given covering brittleness and indentation tests.

Although tests for determining the resistance of rubber compounds to light checking and cracking are widely used, no standardized procedure has been developed. Committee D-11 on Rubber Products, after working on this problem and studying the best present practices, has developed proposed methods which have been approved as a new tentative standard (D 518-38 T). The methods are for use in estimating the comparative

ability of soft rubber compounds to withstand the effect of sunlight and weathering. They do not apply to the testing of material ordinarily classed as hard rubber. It is indicated that they are not suited for use in purchase specification requirements both because correlation with service life is uncertain and because the results from duplicate specimens tested in different locations do not check. No relation between the results of the tests and actual service performance is given or implied. The tests are principally of value when used for comparisons between two or more rubber compounds.

These tests consist of continuously exposing rubber specimens held under strain in direct natural sunlight and weather for definite periods and observing their deterioration as evidenced by the appearance and growth of minute cracks or crazing on the surfaces. The progressive deterioration may ultimately result in rupture of the specimens.

A standardized method of test for fiber length of wool in loose form, top or roving, developed by the wool section of Committee D-13, has been approved. This method, D 519-38 T, is also applicable to other fibers. It gives requirements for sampling and conditioning and describes the apparatus which is required. Requirements are met by one of the commercial sorting machines now on the market. From the values obtained, the average fiber length, standard deviation, and coefficient of variation are calculated.

Standard Vegetables Change Growing, Distributing Methods

GROWING vegetables in standard sizes and shapes, the latest development in the vegetable business, is having an important effect on the entire process of growing and distributing vegetables. It was brought out at a recent convention of the Vegetable Growers Association of America. The Association is the national organization for some 2,000 state and local association members.

The use of standard size containers and the recent rapid spread of packaging for vegetable products is the reason for the changing methods in vegetable growing and distribution. With the use of standard containers it has been found desirable to grow vegetables of uniform size to fit the standard containers. Already, according to a report of the convention in *Business Week*, September 3, the curved neck has been removed from the summer squash, cucumbers have been straightened out and given a more uniform thick-

ness, celery is being grown with shorter stalks and less foliage above the bunch to conform better with standard container dimensions.

Commercial growers are more and more using greenhouses and special fertilizers for the control of atmospheric and soil conditions. Some of the greenhouses are so large that planting and cultivation are carried on inside with tractor equipment. The trend toward packaging is also affecting distribution. Formerly, growers gathered their vegetables without regard to size and shipped them in a lot to commission merchants, who graded them for the market and threw out the culls. Now, with increasing control of size and quality through scientific development of seeds, planting, and cultivating, much of the grading and packaging is done by the grower, himself, and the commission merchant is becoming less important economically, speakers at the convention said.

Food and Drug Administration Standards Have Force of Law

UNDER the provisions of the new Federal Food and Drug Law, which was adopted June 25, 1938, the U. S. Department of Agriculture is now marshalling its facilities for setting up standards of identity for foods. The authority of the Department extends to all foods with the exception of butter, dried fruits, and fresh or dried vegetables, and certain exceptions in regard to citrus fruits and melons.

Secretary of Agriculture Henry A. Wallace has approved the recommendation of the Food and Drug Administration for the appointment of a Food Standards Committee in the Food and Drug Administration. The standards recommended by this committee will be given public hearings and will then be used as criteria in the enforcement of the new law. Heretofore, the Food and Drug Administration has been forced to demonstrate in court, in each and every case, that the administrative standards announced for various products represented the standards of consumers and of reputable trade. Experience with the standard for butter, the one standard of identity which had been set by law, however, had showed how much more effective enforcement could be when there was a recognized standard to go by. Now, the standards promulgated by the Secretary of Agriculture will have the full force of law.

In naming the new committee approved by the

Secretary of Agriculture the Food and Drug Administration has named four members of the food standards committee which has been working on administrative standards for the past 25 years, and two new members. This committee has consisted of representatives from the Association of Official Agricultural Chemists, the Association of Dairy, Food and Drug Officials of the United States, and the U. S. Department of Agriculture.

The work of the committee will be to formulate definitions and standards both of identity and of quality, including fill of container. The committee will meet in the Food and Drug Administration at Washington at intervals to review the data which have been assembled, draft tentative standards, and then upon the conclusion of public hearings, required by the act, make its final recommendations.

Public hearings on proposed regulations for the enforcement of the new Food and Drug Act were held November 17 in the Department of Agriculture South Building, Washington, D. C. The Department says in its release that it "desires to have the benefit of suggestions and constructive criticisms from consumers, interested industries, and others before these regulations are formulated for promulgation." Those who are unable to attend the public hearing are invited to submit their expressions by letter by November 24.

British Circulate Draft for Metal Arc Welding, Want Comments by March

A proposed standard for Metal Arc Welding in Mild Steel as applied to bridges and general building construction, a revision of a standard formerly approved by the British Standards Institution, is now being circulated by the BSI for comment.

Comments on the provisions of the draft standard will be received by the BSI until March 22, 1939. Copies of the draft CE (ME) 9338, may be borrowed from the American Standards Association.

The Canadian Engineering Standards Association has also just issued tentative standards on welding problems. These standards are the Tentative Welding Qualification Code, S47T-1938,

which specifies standards and tests for the qualification of fabricators, contractors, supervisors, and welders engaged in the construction of welded steel buildings, and the Tentative Specification for Metallic Arc (Iron and Steel) Electrodes for Welded Steel Buildings, S48T-1938, which gives requirements for iron and steel electrodes for use by manual metallic arc welding and metallic arc welding by automatic and semi-automatic welding machines in structural steel welding. It is intended for the use of electrode manufacturers and structural steel fabricators. Copies of these two Canadian tentative standards are available from the American Standards Association at 50 cents each.

No Standards Here! Result — Accidents

"Before starting in 23 States, stopping in 37 States or turning right or left in 39 States, a signal of such movement must be given to warn the operators of other vehicles. The manner in which hand signals are given varies considerably. To indicate an intention to stop or decrease speed suddenly, the left arm is extended horizontally in 17 States, downward in 14 States and waved up and down in 2 States.

"For a left turn, the motorist extends his left arm horizontally in 27 States, points to the left in 6 States and holds his arm upward in one State and downward in another.

"A forthcoming right turn is to be signalled in 14 States by extending the left arm horizontally, in 16 States by holding it upward, in 3 States by a circular motion of the left hand, and in 2 States by a sweeping motion of the left arm from front to rear. Four States leave methods of signalling to the imagination of the driver.

"In 12 States the same signal (the left hand extended horizontally) may indicate a stop, a right turn, or a left turn. Methods of interpretation are left to the ingenuity of other drivers."—*Highway Research Abstracts, May. An abstract from "Non-Uniformity Of State Motor Vehicle Traffic Laws," Motor Vehicle Traffic Conditions in the United States, Part I, p. 97. U. S. Bureau of Public Roads and the Highway Research Board.*

Minor Revisions in Tests For Woven Textile Fabrics

The American Standards Association has approved minor changes, mostly editorial, and minor revisions to bring the procedure into line with current practice, in the general methods of testing woven textile fabrics.

The American Society for Testing Materials, sponsor for this project, submitted the revised standard to the ASA for approval.

The American Standard General Methods of

Testing Woven Textile Fabrics (L5-1938; A.S.T.M. D 39-38) may be ordered from the American Standards Association at 25 cents each.

44 American Standards Apply to Building Codes and Materials

The following list of 44 American Standards for use in connection with building construction problems and operation of buildings have been approved by the American Standards Association:

air conditioning, installation of (Z33.2-1938)
blower and exhaust systems, installation (Z33.1-1938)
brass fittings for flared copper tubes (A40.2-1936)
cement, Portland (A1-1931, A1.2-1933)
concrete, voids in aggregates (A19-1923)
construction safety code (A10-1934)
dust explosions, prevention (10 approved standards) (Z12)
electrical code, National (C1-1937)
electrical safety code (C2-1927)
elevators
inspection (A17.2-1937)
safety code for (A17.1-1937)
exhaust systems, installation (Z33.1-1938)
exits, building (A9-1937)
fire hose
cotton rubber lined (L3-1935)
screw thread, coupling (B26-1925)
fire tests (A2-1934)
floor and wall openings (A12-1932)
floors, forms for concrete joist construction (A48-1932)
gas burning appliances, approval and installation requirements for (26 approved standards) (Z21)
gas, city, piping and fittings (Z27-1933)
gas safety code (K2-1927)
gypsum plaster (5 approved standards) (A49)
heating, warm air, installation (Z33.2-1938)
industrial sanitation (3 approved standards) (Z4)
ladders (A14-1935)
lighting
factories (A11-1930)
schools (A23-1938)
lightning, protection against (3 approved standards) (C5)
pipe, cast iron soil (A40.1-1935)
pipe flanges, sprinkler fittings (B16g-1929, B16g1-1937)
poles, wood (13 approved standards) (O5)
railings and toe boards (A12-1932)
refrigeration, safety code (B9-1933)
steel
bridges (G18-1936)
buildings (G19-1936)
plates, mild (G20-1936)
rivet, structural (G21-1936)
steel, concrete reinforcement
bars (A50.1-1936, A50.2-1936)
wire (A50.3-1936)
steel reinforcing
bars (A47-1932)
spirals (A38-1933)
timber, testing (O4a-1927, O4b-1927)
ventilating systems, installation (Z33.2-1938)
window cleaning (A39-1933)

Copies may be ordered from the ASA.

Consumer Standards Successful In the Gas-Appliance Industry

IT is a time-worn axiom that the proof of the pudding is in the eating. The thought expressed in this is particularly true in standardization work. The value of the standard is directly proportional to four principal factors. These are:

- (1) the representative character of the committee or body which drafts the standards
- (2) the technical accuracy or soundness of its provisions
- (3) the extent that the standard is applied or enforced, and
- (4) the degree to which the standard meets the condition of the times, or in other words its modernity.

These four factors are so interrelated that it would be difficult to determine which is the most important. However, this much may be said, that regardless of the representative nature of a standard or the degree of its soundness, unless it is actively applied it is of little practical value either to an industry or to the public. Furthermore, unless a standard is kept up to date in line with our ever-changing industrial, economic, and social development, its value is diminished in proportion to the extent it lags behind current thought and modern conditions.

There is one additional point which is of importance, particularly with respect to standards for consumer goods, and this is a means of identification to indicate to the consumer that the article which he or she contemplates purchasing complies with the accepted standard. In the industrial field where well-staffed purchasing departments exist, trained in the art of selecting goods on a scientific basis, the marking of goods themselves as complying with the given standard is of less importance. As one of the millions of American consumers who day after day is confronted with selecting from a maze of products those which represent the best value for the money expended, the author can sympathize with the problems of consumers generally and the desirability of an unbiased yard-stick as an aid to purchasing. With the infinite variety of brands of the same product now offered to the public and with the claimed merits of each extolled by their respective makers, the consumer lacking an

Consumers, manufacturers, utilities, and general public all benefit from application of national standards to gas appliances and parts

Frequent revisions keep standards up-to-date. Four newly revised standards just approved by ASA

by

Franklin R. Wright

*American Gas Association
Testing Laboratories*

unbiased authoritative guide must still depend upon the "trial and error" method. The old doctrine of "Caveat Emptor" still prevails to a larger degree than would seem justified in comparison with the progress which this country has made in every other line.

Fortunately, there are fields in which great strides have been made to provide a reliable consumers' guide. The inauguration of a program in the standardization of consumer goods through the American Standards Association is a further hopeful sign which eventually should result in the availability of reliable guideposts for the consumer.

There is one field—the gas industry—wherein national standards have been developed and in which products are tested in accordance with such standards and properly labelled for the consumers' benefit.

The standards concerned not only embody the four factors listed in the beginning of this article

ASA Procedure Brings Together Organizations Concerned

How the procedure of the American Standards Association acts to bring together the different organizations concerned in the various problems of a standardization program is well illustrated in the personnel of the Sectional Committee on Approval and Installation Requirements for Gas-Burning Appliances (Z21). The membership of this committee includes the gas operating companies, consumer groups, mutual fire insurance companies, organizations concerned with different phases of building, and governmental organizations.

Members of this committee, which is working under the administrative leadership of the American Gas Association, are:

R. B. Harper, American Gas Association, Chairman

R. M. Conner, American Gas Association, Secretary

American Gas Association, Operating Companies, *E. L. Hall, R. B. Harper, W. S. Walker, H. E. G. Watson, L. B. Wilson, Jr., W. W. Winter, C. C. Winterstein*

American Home Economics Association, *Katharine M. Ansley*

American Institute of Architects, *Theodore I. Coe*
Associated Factory Mutual Fire Insurance Companies, *George W. Brahmst, George M. Wile (alt.)*

Association of Gas Appliance and Equipment Manufacturers, *Frank H. Adams, W. E. Derwent, Lyle C. Harvey, B. B. Kahn, Harold Massey, E. L. Payne, F. E. Sellman, A. Stockstrom*

Heating, Piping and Air Conditioning Contractors National Association, *George P. Nachman, Fred-eric R. Ellis (alt.)*

National Association of Master Plumbers of the U. S., *Jere L. Murphy*

U. S. Department of Agriculture, Bureau of Home Economics, *Louise Stanley, Helen A. Holbrook (alt.)*

U. S. Department of Commerce, National Bureau of Standards, *E. R. Weaver*

U. S. Department of the Interior, Bureau of Mines, *George W. Jones*

U. S. Treasury Department, Bureau of the Public Health Service, *R. R. Sayers*

but also the fifth one mentioned later; namely, the identification of the goods for the consumers' guidance.

These standards are representative in character, since they are developed by a sectional committee of the American Standards Association, representing all interested consumer, producer, and general interest groups throughout the United States and Canada. In addition to representatives of the industry concerned, a few of the other organizations having membership on the sectional committee and actively participating in the preparation of these standards are: The National Bureau of Standards, U. S. Bureau of Mines, U. S. Public Health Service, U. S. Bureau of Home Economics, American Home Economics Association, National Safety Council, Associated Factory Mutual Fire Insurance Companies, and many others.

The standards are technically sound because:

(1) the committees which draft them are experts in their field.

(2) the accuracy and practical significance of every point is proven by extensive research or by field surveys, or both, and,

(3) they are published and submitted for the scrutiny and careful consideration of every company in the industry as well as all other organizations concerned before final adoption.

It will be evident, therefore, that the first two factors mentioned previously as prime requisites of a sound standard have been met.

Of even greater significance is the fact that these standards are rigidly enforced by the industry concerned through the medium of national testing laboratories. Approximately 95 per cent of the products concerned on the market today have been tested and certified as complying in detail with these requirements. Furthermore, the program does not stop with the testing of products in the laboratory, but a rigid system of field and factory inspections is maintained to insure that every piece of equipment manufactured and sold bearing the marking of compliance with these standards is constructed identically with the models tested. Thus the third factor that determines the practical value of a standard is clearly established.

There is only one industry under which such a program is enforced. That is the gas industry. The standards referred to are those applying to gas appliance and gas appliance accessories and they are enforced through the medium of the American Gas Association Testing Laboratories, located in the cities of Cleveland, Ohio, and Los Angeles, California. Their familiar Laboratory Seal of Approval is permanently attached to every approved gas appliance and is now known to

millions of consumers throughout the United States and Canada.

The fourth factor determining the value of a standard, that of keeping standards up to date in line with current progress, is one which has always been actively stressed in conjunction with the standards for gas appliances and gas appliance accessories. Developments with respect to some types of gas appliances are more rapid and changes more frequent than with some other types. In such cases, the standards applying to them must be changed comparatively often.

Of the twenty-six sets of standards applying to various types of gas appliances and gas appliance accessories, all of which have been approved as American Standards by the American Standards Association, revised editions are issued on the average of every two years. Some standards are revised each year while others require revision at less frequent intervals.

During the last year four revised standards for gas appliances and accessories were completed and approved as American Standards as of Octo-

ber 31, 1938. These include revised American Standard Approval Requirements for central heating gas appliances and for gas water heaters, and revised American Standard Listing Requirements for attachable gas water heating units without water-carrying parts and for flexible gas tubing.

The practical significance of these standards both from the point of view of the gas industry and of the consumer, as well as the principal revisions embodied in the revised editions, may be of interest.

The standardization and testing program carried on by the American Gas Association Testing Laboratories has shown during the past 13 years many benefits not only to the public but to producers of gas appliances and to gas utilities. The principal advantages of this program from the manufacturers' standpoint may be briefly summarized as follows:

1. National standards for gas appliances and gas appliance accessories have served as authoritative guides in the design and construction of equipment.
2. Instead of a multitude of local and frequently



A gas warm-air furnace is tested at the AGA Testing Laboratories to determine its heating efficiency

- conflicting specifications, manufacturers now, in general, have to meet only a single set of requirements for their appliances to be acceptable in any section of the United States and Canada.
3. Since national standards have been developed, manufacturers have been able to eliminate numerous models not only of appliances but of appliance parts, such as burners. Before the inauguration of this program certain customers frequently demanded that such appliances and parts be furnished in line with their particular desires. Standardization has meant a large reduction in manufacturing costs.
 4. Through the standardization of threads, bolts, fittings, and other parts of appliances, additional savings have been made possible for producers.
 5. The testing of appliances and accessories for compliance with the standards has been of tremendous value to manufacturers in indicating desirable changes in construction and performance, thus assuring that appliances when finally approved will give safe, satisfactory, and durable service to the consumer. This is probably one of the most important advantages to manufacturers who, in general, do not have the elaborate equipment and testing facilities available for thorough examination of their products. Appliances put on the market without first being thoroughly tested may cause the loss of goodwill to the manufacturer and even heavy expense in the event of faulty design and performance.

From the gas utility point of view the development of standards for gas appliances and the enforcement of these standards through central testing laboratories has meant:

1. Unsafe and improperly designed gas appliances have been eliminated from the market.
2. Customer goodwill has been built up through the use of appliances which are more efficient, more dependable, faster in operating speeds, and better in all-around satisfactory performance from the user's angle.
3. There has been a marked reduction in the cost to utility companies of servicing appliances, through the standardization of parts, and through the testing of the entire appliance before it is offered for sale and installed on the consumer's premises. This has been particularly important in view of the advent of automatic gas appliances with their many controls and accessories. Each of these controls and accessories are, of course, subjected to rigid tests, including life tests to insure that they will function properly throughout the life of the appliance.
4. The standards have served as a reliable yardstick to utility companies in selecting equipment, and the fact that appliances approved by the American Gas Association Testing Laboratories comply in detail with American Standards has practically eliminated the necessity of utility companies maintaining their own appliance laboratories for testing equipment which they desire to offer for sale.

From the standpoint of consumers and the public generally the development and enforcement of standards for gas appliances and gas appliance accessories has meant:

1. Better gas appliances at less cost.
2. Elimination of unsafe and improperly designed equipment from the market.

3. Marked improvement in the appearance, convenience, efficiency, speed of performance, dependability, and other features of gas appliances.
4. A thorough, unbiased, non-profit testing service to insure compliance with these standards at a total cost of only about five cents per approved appliance sold in the United States and Canada.
5. Better gas service through continuous research which has been carried out through the development and periodic revision of these standards to make appliances tested under them more acceptable for use.
6. Guidance for Federal, state, and local regulatory bodies through use of these standards in the drafting of sound legislation when needed to control the quality of gas appliances sold to the public.
7. Provision of a reliable and authoritative national guide to purchasers in the selection of gas-burning equipment through the Laboratory Seal of Approval attached to every approved gas appliance.

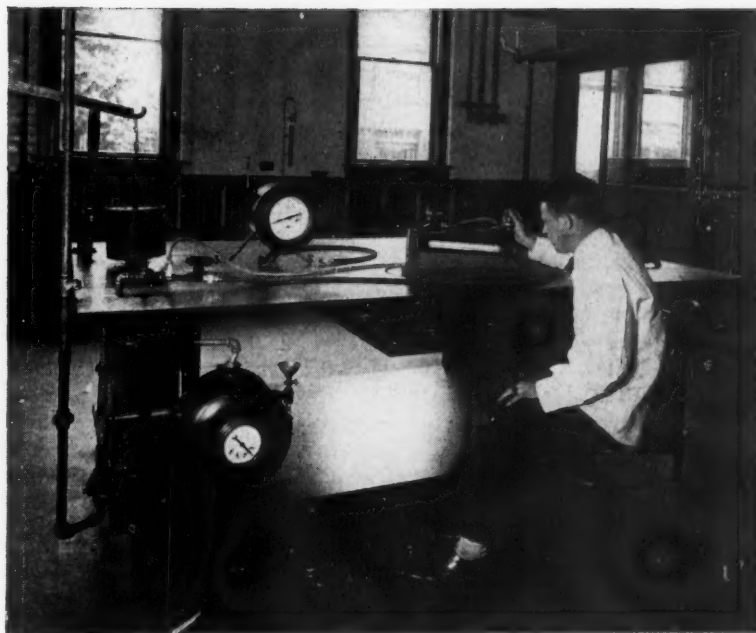
Referring to the four sets of requirements recently revised, the principal changes are discussed below.

Both the Approval Requirements for Gas Water Heaters and the Listing Requirements for Attachable Water Heating Units Without Water-Carrying Parts have been extended to permit the approval of such equipment for use with undiluted butane, as well as mixtures of butane and propane. For some years past these standards have included requirements for the approval of water heaters and the listing of attachable units for use with undiluted propane and butane-air, in addition to the regular city gases. However, increases during the past few years in the use of undiluted butane and mixtures of butane and propane brought a great many demands for the approval of appliances for use with these gases.

Research Leads to Standards

After extensive research was carried out at the American Gas Association Testing Laboratories in Cleveland, under the supervision of the requirements committees concerned, standards were developed to permit the certification of water heaters and attachable units when operating on butane and mixtures of butane and propane. The other principal change in these requirements, in addition to minor ones largely of an editorial nature, is that permitting a reduction in the allowable operating time of automatic devices designed to prevent the escape of unburned gas. These devices are mandatory on all automatic heaters and provide a safety feature. In the event the means of ignition, or pilot, is extinguished from any cause whatsoever, the automatic device will shut off the main gas supply to the appliance. In the case of appliances for use with propane and butane these devices must also operate to shut off the pilot as well as the main gas supply. This additional safety feature is mandatory in

Tests are carried out by the Laboratories to determine the capacity of flexible gas tubing



view of the fact that these two gases, or mixtures of them, are heavier than air and tend to settle to the floor rather than be carried out the flue.

The new standards for central-heating gas appliances, which cover house-heating boilers, basement furnaces, and floor furnaces, include a number of provisions not covered in the previous edition. Among the principal revisions was the addition of separate requirements covering the efficiency of both fan-type basement furnaces and fan-type floor furnaces. Under the new standards the rise of outlet air temperatures is limited to between 70 and 100 F. In the case of basement furnaces the air must be delivered against a static pressure of 0.2 in. water column. In addition, the minimum allowable thermal efficiency of all fan-type furnaces has been increased five per cent above that previously allowed.

The limitations on the outlet air temperature and the stipulation as to static pressure applied in the case of basement furnaces are to insure that sufficiently large blowers will be supplied to provide for the delivery of adequate volumes of air at a proper temperature for the most satisfactory heating results. As floor furnaces are connected directly to registers without any intervening duct work, the imposition of a static pressure at the warm air outlet of the furnace is, of course, unnecessary.

Requirements Strengthened

The requirements for fan-type floor furnaces have been strengthened in a number of other respects, including the mandatory use of a tempera-

ture limit control, or other means incorporated in the appliance to limit the maximum register temperature under all conditions. The rigidity of both the requirements for boilers and furnaces has been further increased under the revised standards by the inclusion of an additional test for combustion under the conditions of a down-draft in the flue pipe. Previously, the efficiency of draft hoods in protecting the performance of appliances from the effects of down-draft conditions was determined largely by observance of the appearance of flames of burners under these conditions. Investigations, however, indicated that this was not sufficiently reliable, and for that reason an actual combustion test is now specified to insure that draft hoods will satisfactorily protect the performance of the appliance under such extreme conditions.

The revisions embodied in the revised edition of the standards for flexible gas tubing are principally of an editorial nature. The main changes involved a revision in the title from "approval" to "listing" standards and the breaking up of the requirements into two parts by separating the construction from the performance specifications. When, in 1930, the American Gas Association undertook the development of requirements for all types of gas-appliance accessories, differentiation was made in the terminology applying to standards for complete gas-burning appliances and standards for accessories, the former being known as "Approval" requirements and the latter as "Listing" requirements. The standards for flexible gas tubing were the first developed after the

establishment of the Laboratories in 1925 and, consequently, were at that time labelled "Approval" requirements. In order to bring these requirements into line with the policy followed with respect to all accessories, a change in title was made.

These four revised sets of requirements will become effective January 1, 1939, and on and after that date all equipment falling under their provisions submitted to the American Gas Association Testing Laboratories for approval will have to comply in detail with them. Furthermore, equipment tested and approved under standards in existence five years ago will have to be resubmitted for examination to the Testing Laboratories and be reapproved under the new standards in order to bear the Laboratory Seal of Approval in the future. This is in line with the American Gas Association's policy in the application of all standards for gas appliances and accessories. Certification granted to an appliance or accessory may be renewed from year to year for a total period of five years by the Labora-

tories after appliances are inspected at the manufacturer's plant and found to be made exactly in accordance with the models tested. At the end of five years, however, appliances must be resubmitted and retested in accordance with the latest requirements. This insures that appliances bearing the Laboratory Seal of Approval meet reasonably modern concepts of safety, efficiency, substantiality, and durability.

In the inspection of appliances engineers of the American Gas Association Testing Laboratories travel upwards of 75,000 miles each year in making inspections not only at the manufacturers' plants but also in examining equipment on dealers' floor and frequently on the premises of users. Thus, a rigid enforcement of the American Standards for gas appliances does not stop with Laboratories' tests but is carried on through field inspections to the manufacturers' plants and on through the sales outlets to insure that the appliances offered for sale to the public bearing the Laboratories' Seal of Approval comply in every detail with American Standards.

***Good Housekeeping* Explains Its Certification Procedure**

The article in the September issue of INDUSTRIAL STANDARDIZATION, "How Three Organizations Certify Consumer Goods," by Lincoln H. Clark, which was reprinted from the *News Bulletin* of the School of Business of the University of Chicago, has aroused some criticism on the part of the organizations mentioned. The editors of *Good Housekeeping* write that one paragraph is wrong on several counts. This paragraph reads:

"According to *Good Housekeeping's* statements, about 30 per cent of the products submitted for testing are disapproved. Undoubtedly this shows that some of the merchandise submitted by quacks and manufacturers unable to advertise nationally is rejected. But the consumer is not told what products are turned down, or how the products are tested. Approvals like those granted by *Good Housekeeping* would likely be regarded as worth much more if they were known to be on generally accepted standards."

Good Housekeeping answers:

"First, the inability or unwillingness of a manufacturer to advertise in *Good Housekeeping* has never had a bearing on our testing services. Our tests are made free of charge to manufacturers, and advertising in *Good Housekeeping* has never been a requirement. In fact, in an average year less than 10 per cent of the products we test and approve are advertised in *Good Housekeeping*.

"Second, in our magazine pages, and in the buying guides and other booklets we offer to consumers, we have repeatedly stated that consumers may learn, upon simple request, the names of products we have disapproved. Many consumers receive information about disapproved products.

"Third, consumers are told what our testing standards and procedures are in articles published in *Good Housekeeping*, and in the booklets we publish for consumers, tens of thousands of which are distributed annually. Many schools and colleges, and testing laboratories (including the National Bureau of Standards) have also been supplied with our testing standards and procedures for various kinds of products.

"A very important feature of our services which Mr. Clark did not attempt to discuss is our willingness to assume responsibility toward consumers for the satisfaction derived from products we have tested and approved. We will undertake to adjust equitably any justifiable complaint any consumer may make to us about any product we have approved. We know of no other organization that tests merchandise for consumers which does this. We could not do it ourselves if our tests were not impartially conducted and based upon acceptable testing standards and procedures."

Reorganized Committee to Consider Revision of Electricity Meter Code

A REVISION of the standard requirements for electricity meters has been undertaken by the sectional committee in charge of the American Standard Code for Electricity Meters. This code, which was approved by the American Standards Association in 1928, covers the standard requirements for the meters which measure the quantity of electricity consumed in the homes, business places, and factories of the nation. It is used for the manufacture, installation, and testing of these meters.

Marked improvements in meters have been made during the ten years since the code was approved, however, and it is now believed by many concerned with the manufacture and use of electricity meters that the present code should be revised to bring it up-to-date with the latest developments.

At the first meeting of the reorganized committee October 3, J. Franklin Meyer, National Bureau of Standards, was elected chairman, and H. E. Koenig, Electrical Testing Laboratories, New York, was named secretary.

Six subcommittees have been set up to work on the proposed revision covering:

Definitions

Standards and Metering

Specifications for Acceptance of Types of Electricity Meters and Specifications for Acceptance of Types of Auxiliary Apparatus for Use with Meters

Installation Methods and Watthour Meter Test Methods

Laboratory and Service Tests

Demand Meters

Meetings of the subcommittee chairmen with the secretary of the sectional committee from time to time will correlate the work of these subcommittees.

The sectional committee is working under the administrative leadership of the National Bureau of Standards and the ASA Electric Light and Power Group.

Simplified Practice Recommendation Recommends Sizes of Garment Boxes

A survey of production and sales to determine the most frequently used sizes of stock folding boxes for garments and dry cleaning has resulted in Simplified Practice Recommendation R172-38, which became effective September 1. The recommendation lists dimensions of boxes and thicknesses of boxboard for stock folding boxes (auto-

Committee of Experts to Work On Code for Electricity Meters

Members of the reorganized Sectional Committee on the Code for Electricity Meters (C12) represent manufacturers, utility companies, and governmental and regulatory groups. They are:

J. Franklin Meyer, National Bureau of Standards, Chairman

H. E. Koenig, Electrical Testing Laboratories, Secretary

Manufacturers of Watthour Meters—

National Electrical Manufacturers Association—W. H. Pratt, General Electric Company; W. M. Bradshaw, Westinghouse Electric & Mfg. Company; F. C. Holtz, Sangamo Electric Company; Stanley Green, Dun Electric Company

Regulatory and Standardization Groups—

National Bureau of Standards—H. B. Brooks; J. Franklin Meyer

State Public Service Commissions—C. B. Hayden, Public Service Commission, Madison, Wisconsin; R. H. Nexsen, Public Service Commission, New York; Russell G. Warner, Public Utilities Commission, Hartford

Utilities—

Association of Edison Illuminating Companies—W. C. Wagner, Philadelphia Electric Company; E. E. Hill, Consolidated Edison Company of New York

Edison Electric Institute—A. J. Allen, Consolidated Edison Company of New York; O. K. Coleman, American Gas & Electric Company; J. O'R. Coleman, Edison Electric Institute (alt.)

Municipal Systems—Norvin S. Meyers, Division of Light & Power, Dept. of Public Utilities, Cleveland

General Interests—

American Institute of Electrical Engineers—Professor Royce E. Johnson; Professor R. D. Bennett

Electrical Testing Laboratories—Herman Koenig

matic and lock-corner types) used by garment and specialty stores, as well as by dry cleaning and tailoring establishments.

Until the printed booklet is available, free mimeographed copies of the recommendation may be obtained from the Division of Simplified Practice, National Bureau of Standards, Washington, D. C.

New Zealand Body Issues Fencing-Wire Specifications

The New Zealand Standards Institute has recently published a Standard Specification for Galvanized (Zinc-Coated) Steel Fencing Wire, N.Z.S.S. 143, copies of which may be ordered or borrowed through the American Standards Association.

The standard includes tables showing the minimum tensile strength of wire and the regulations for dipping in standard copper sulphate solution. It covers New Zealand Standard Galvanized Steel Fencing-Wire (first-class and second-class galvanizing) in 4, 6, 7, 8, 9, 10, 12, 14, and 16 gauges; and New Zealand Standard Galvanized "High Tensile" Steel Fencing-Wires in 12½ and 14 gauges. The method of test is given in New Zealand Standard Specification 134 (British Standard Specification 443-1932), "The Testing of the Zinc Coating on Galvanized Wires."

A.S.T.M. Tentative Revisions On Approved Standards

Tentative revisions of A.S.T.M. standards approved by the American Standards Association have been issued by the American Society for Testing Materials for a period of trial before they are submitted as revisions of the American Standards. Standards for which revisions have now been issued are:

- Specifications for Gypsum Plasters
(A49.3-1933; A.S.T.M. C 28-30)
- Method of Test for Carbon Residue of Petroleum Products (Conradson Carbon Residue)
(Z11.25-1936; A.S.T.M. D 189-36)
- Specifications for Titanium Barium Pigment
(K38-1937; A.S.T.M. D 382-35)
- Specifications for Calcium Pigment
(K39-1937; A.S.T.M. D 383-35)
- Specifications for Titanium Dioxide
(K40-1937; A.S.T.M. D 384-36)
- Specifications for Commercial Para Red
(K31-1937; A.S.T.M. D 264-28)
- Method of Test for Determination of Toluol Insoluble Matter in Rosin
(K21.1-1936; A.S.T.M. D 269-30)
- Methods of Laboratory Sampling and Analysis of Coal and Coke (K18-1937; A.S.T.M. D 271-37)
- Specifications for Alloy-Steel Bolting Materials for High-Temperature Service
(G17.2-1934; A.S.T.M. A 96-33)
- Specifications for Forged or Rolled Steel Pipe Flanges for High-Temperature Service
(G17.3-1936; A.S.T.M. A 105-36)
- Specifications for Zinc-Coated (Galvanized) Sheets
(G8b1-1931; A.S.T.M. A 93-27)
- Methods of Testing Molded Materials Used for Electrical Insulation
(C59.1-1938; A.S.T.M. D 48-37)
- Specifications for Lap-Welded and Seamless Steel Pipe for High-Temperature Service
(B36.3-1936; A.S.T.M. A 106-36)

Any one interested in these revisions may write the American Society for Testing Materials, 260 South Broad Street, Philadelphia, for further details.

Revised Paint Standard Recognizes Market Change

A change in manufacturing and marketing practice was recognized by the American Standards Association recently when it approved a revision of the American Standard Specifications for Basic Carbonate White Lead. Basic carbonate white lead, semi-paste in oil, has been largely superseded as a paint material by a semi-paste containing a volatile thinner, and the revision makes this change in the standard. The American Society for Testing Materials, sponsor for the project, recommended the revision to the American Standards Association following action by its Committee D-1 on Paint, Varnish, Lacquer, and Related Products.

Copies of the standard are available from the American Standards Association at 25 cents each.

Trolley Wire Standards Brought Up-to-Date

A revision of the American Standard Specifications for Bronze Trolley Wire and the American Standard Specifications for Copper Trolley Wire has been approved by the American Standards Association, bringing the trolley wire standards up-to-date with industrial practice.

The revisions were developed by A.S.T.M. Committee B1 on Copper and Copper Alloy Wires for Electrical Conductors, and have been approved by the A.S.T.M., which is sponsor for this project.

ASA Withdraws Approval Of Calcined Gypsum Standard

The American Standards Association has withdrawn its approval of the American Standard Specifications for Calcined Gypsum (A49.2-1933) at the request of the American Society for Testing Materials. As proprietary sponsor, the A.S.T.M. has been responsible for revisions of the standard. The A.S.T.M. reports that one type of gypsum plaster covered in the standard is no longer in use, and the other type, calcined gypsum, for finishing-coat work, is covered by the American Standard Specifications for Gypsum Plasters (A49.3-1933; A.S.T.M. C28-30).

Parents' Magazine Starts New Service Based on Seal of Acceptance

by

Barbara Daly Anderson

*Director, Parents' Magazine
Consumers' Service Bureau*

All three purposes are interrelated and share the common end—that consumers may know more about relative quality in buymanship. The sign of quality in products accepted for advertising in the magazine, is the Consumers' Service Bureau's Acceptance Seal. The seal is at once a symbol and a guide-post to consumers seeking direction in their buying.

Seal of Acceptance Standards

PARENTS' Magazine, like most magazines, has become aware of an aroused interest on the part of consumers in advertised products. To meet this growing tide of organized consumer activity, *Parents' Magazine* has formally established a Consumers' Service Bureau.

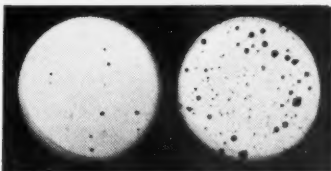
The Bureau is designed, literally, to *serve* the consumers—its subscribers. Broadly, its purposes are three-fold: to insure reader confidence in advertised products; to help solve individual buying problems; to guide readers, and organized consumer groups, in a study of consumer problems.

In the opinion of *Parents' Magazine*, any seal, including its own, possesses merit only as it interprets values relatively. To claim that all products granted the seal share equivalent XYZ standards of quality and value, defeats the true purpose and importance of such a seal. *Parents' Magazine* endeavors to meet the needs and tastes of people of varied incomes and tastes, but it recognizes the limitations imposed on any private corporation when it attempts to pass judgment on ultimate consumer goods. A product may withstand all laboratory tests yet fall short of its mis-

Mrs. Barbara Daly Anderson, Director of Parents' Magazine Consumers' Service Bureau, observes technicians making colony counts in a Sheffield milk laboratory, one of the Sealtest System which is an affiliate of National Dairy Products Corporation. Each day, Grade A and Grade B milk, as well as other dairy products, are analyzed and tested to maintain the Sealtest standards.



Microscopic views reveal less numerous bacteria in Grade A milk (left) than in Grade B milk.



sion as a useful product in the home. Consequently, *Parents' Magazine* Consumers' Service Bureau not only arranges, when necessary, for chemical, biological, or mechanical tests by outstanding commercial testing laboratories, but, as a principal criterion for deciding on the merits of a product, it also arranges for "use tests" in representative homes, in day nurseries, and in child welfare institutions.

The Consumer's Power

Parents' Magazine Consumers' Service Bureau may grant the Acceptance Seal to a product, but the consumer has the power to take away the seal from a product that falls short of claims made for it when in actual use.

For example, a rug cushion may successfully pass chemical and mechanical laboratory testing. But the day by day, wear-and-tear kind of use in the home is an almost immeasurable quality as against the fixed pressure and force of a laboratory treading machine of known weight. In instances like this *Parents' Magazine* Acceptance Seal is the symbol that signifies that a product has conformed to reasonable, measurable standards of material and workmanship in the laboratory and when subjected to short-term practical testing. But the consumer must be the final arbiter of quality and relative worth.

Personalized Service

Parents' Magazine has always maintained a peculiarly intimate relationship with its readers. Matters as biological as bed-wetting, and as impersonal as floor coverings, have been discussed edi-

torially and by direct mail. But with the growth of the consumer movement, reader inquiries and reader comment on advertised products have increased steadily. Requests for information range anywhere from, "Tell us what to look for when buying a vacuum cleaner," to "Is it true that Grade A milk is no lower in bacterial content than Grade B milk?"

Each month a subject is selected from inquiries received and presented in the Consumers' Service Department of the magazine to clear up some questionable point in consumer thinking or to set before readers first-hand information concerning branded products.

It was decided at the outset to mention brand names when discussing buying problems. Consumers have no hesitancy in calling a spade a spade. Inquiries invariably seek information on specific manufactured products. So brand names are mentioned. Space is devoted to some problem common to an industry and illustrated by a particular branded product. In this way, the manufacturer is brought closer to the consumer, while there is no doubt in the consumer's mind of the name and type of product under discussion. It is *Parents' Magazine's* conviction that the consumer's cause is better served by making possible this liaison between manufacturer and consumer.

Readers are encouraged, also, to write in their praise or criticisms of products advertised in the pages of *Parents' Magazine*. The magazine endeavors to secure satisfactory adjustment for the reader if defects are found in products so advertised. In this way, *Parents' Magazine* Consumers' Service Bureau maintains a constant and continuing checkup on products advertised in the magazine so that readers may have maximum confidence in the magazine's Acceptance Seal.

Test Methods to Show Values Of New House Constructions

An attempt to develop a standard procedure for evaluating the structural properties of house constructions has been described by the National Bureau of Standards in a recent report on building materials and structures entitled "Methods of Determining the Structural Properties of Low-Cost House Constructions." The report rescribes the methods now in use in the laboratories of the National Bureau of Standards for measuring the strength, stiffness, and resistance to abuse of construction intended for walls, partitions, floors, and roofs of low-cost houses and apartment buildings.

"Tests of new constructions according to this uniform procedure, as to size of specimen and test methods, along with similar tests on conventional

constructions, are expected to form a more reasonable basis for judging the value of new constructions than any method now available." Dr. Lyman J. Briggs, director of the Bureau, says in his Foreword to the report.

"Ultimately, such performance tests may find their way into building codes to replace present requirements, which specify details of sizes of members for use in conventional types of construction.

"Adequate performance requirements of nationwide acceptance would facilitate the rapid development of new, better, and, it is hoped, cheaper methods of construction."

Copies of the report, BMS2, are available from the Superintendent of Documents, Government Printing Office, Washington, D. C., at 10 cents each.

How to Identify Products—

Unsuitable System Adds to Manufacturing Expense

MOST manufacturers as a natural procedure set up a serial-number identification for their products. In the majority of cases, they continue their serial numbers over many years until finally the numbers reach the unwieldy length of seven or eight digits.

At the same time, these companies expand their engineering, manufacturing, commercial, service, and accounting organizations. Finding the serial numbers not exactly suited for their specialized functions, these sections of the organization are instrumental in developing systems of their own. It is not unusual to find a single product identified differently in sales literature, price books, renewal-part publications, manufacturing records, and service work.

It is doubtful if one method of identification can serve all purposes, but it is worthwhile to review the identification problem periodically to see if the best possible results are obtained under the existing conditions.

One of the more fruitful fields to review in this connection is the identification of construction. Usually, this is a question of identification by reference to design versus the serial number of an individual unit.

Although most manufacturers have a drawing or construction specification scheme for the identification of a design for manufacture, a serial number of an individual unit is often used to serve the purpose on the nameplate of the product. While the use of a serial number of an individual unit is justified under certain conditions, serial numbers are often misapplied, with the result that the manufacturer must maintain extensive and elaborate cross references between the identification of the individual unit and the construction of the product.

Can Extend Use

The identification used by the manufacturer for identifying a construction in his drafting room and factory ordinarily can be extended to cover in a more practical way most of the pur-

Use of design identification for commercial numbering of identical units, supplemented by serial numbers for large units, is suggested to solve problem of unwieldy serial designations

poses for which a serial number has been used in the field. These include renewal-parts, and pricebook data, installation prints, application information, complaints, etc. Where a design identification is used, one number covers thousands of identical units which otherwise would have separate serial-number identifications.

It is more or less a minor point whether the identification is known by the same name commercially as is used in manufacturing work, or is given some other name such as catalog, style, or model number. While the same number for both commercial and manufacturing work is desirable to avoid cross references, a separate duplicating series for commercial work probably is still preferable to trying to identify medium and large production products by individual serial numbers.

Serial numbers are required only where it is necessary to identify an individual unit. In general, a serial number is justified on apparatus important in respect to value, size, or intricacy of design, such as locomotives, turbines, etc. For such apparatus, it is not unusual for nominally duplicate machines to have slightly different construction. As a result, identification by design is more or less equivalent to the identification of an individual unit.

Serial numbers are also required many times for guarantee, finance, insurance, operating-record, licensing, or similar purposes. In cases of this kind, the specialized purpose of the serial

Industry Wants Information On Standard Numbering Systems

Many requests for information about numbering systems received by the ASA Library make this article, used by *Industrial Standardization* through the courtesy of the *NEMA News*, particularly timely. The American Standards Association will be glad to receive, for publication, any comments, or statements, on this subject which may be helpful in developing standard numbering systems.

number should be recognized, particularly on medium and large-production machines. As a rule it is advantageous to identify products of this character by their design and restrict the use of the supplementary serial numbers to the particular purpose for which they are provided.

No specific method of assigning serial numbers will satisfy all requirements. A manufacturer with a small number of units probably would have less work in the assignment of serial numbers by the use of a single series of numbers. With an increase in the number of units, particularly on dissimilar lines of apparatus, it might be desirable to establish a number of series, duplicate numbers every ten years, or to provide a

numbering system where the essential part of the number starts over again each year or each month. In a large company perhaps the use of all of these systems is justified to take care of the different requirements of various products.

In view of the fact that serial numbers and identifications of design have respective fields of application, it is necessary to analyze any set of conditions and select the identification system best suited for the conditions. A review of identifications undoubtedly will indicate numerous instances where an identification of design will be profitable in place of a serial number system. It often happens that, with the discontinuance of serial numbers, some idea of the approximate date of manufacture is desirable as a check on production methods or for other purposes. A two-letter code stamped on the serial number blank indicating the year and the month of manufacture, may be useful for this purpose. At the same time, suffix numerals starting with "1" each month or each quarter might be added to the date-of-manufacture code if and as required, to satisfy any specialized requirements of supplementary serial numbers. If supplementary serial numbers are used, care should be taken to avoid the establishment and maintenance of unnecessary records of the serial numbers.

In any case it should be remembered that the use of unsuitable identifications, especially serial-number records of thousands of identical units, results in increased manufacturing expense and may handicap service functions.

Australian Standards Association Organizes Chemical Committee

Increasing interest in the chemical standardization work of the Australian Standards Institution recently brought about the organization of a general committee to coordinate the work on chemical problems, the S.A.A. has announced. The new Committee, which has taken over complete supervision and responsibility for technical committees working on standards for cement, coal and coke, creosote, paint and varnish, and fineness of dusting sulphur, is similar to the general industry committees set up in other fields by the American Standards Association.

At the first meeting of the Committee September 5, two new projects were suggested, on joiners' glue, and on methods of sampling powders, pastes, or liquids, in bulk or in packages.

In connection with the proposed standard for joiners' glue, a British draft standard which requires the use of American black walnut for testing purposes was considered. It was suggested

that the methods of test of the British Standards Institution and the Australian Standards Institution should be correlated, and that some wood grown or available in Australia and agreed upon by the Australian and British organizations should be substituted for the American wood in the tests required. This suggestion will be referred to the Australian chemical industry.

Minor Revision Approved In Standard for Rivet Bars

A minor revision, consisting of an expansion of the table covering permissible variations in diameter of rivet bars, was approved by the American Standard Specifications for Structural Rivet Steel.

The change was recommended to the ASA by the American Society for Testing Materials, which is sponsor for the project.

The standard (ASA G21-1938; A.S.T.M. A 141-38) may be ordered from the American Standards Association at 25 cents per copy.

ASA Company Member Forum Holds Informal Meeting

An informal meeting of the ASA Company Member Forum was held October 26, attended by engineers interested in the application of standards in 12 companies and the U. S. War Department. A. M. Houser, Engineer of Standardization, Crane Company, discussed the development of standardization work in his company.

Plans were made for subjects to be discussed at future meetings. The next meeting, to be held probably in February, will consider the relationship of standardization work to other departments, such as research, development, engineering, purchasing, manufacturing, and inspection; as well

as methods of putting standards into effect and of policing their use.

The Forum was organized by the American Standards Association to serve as a medium for the informal exchange of ideas on problems connected with the organization and operation of a standards department in a company. Company Members of the ASA who are interested in company standards and specifications are invited to write the ASA for further information about the plans of the Forum. Company Members who are willing to take an active part in the discussions of the Forum are eligible for membership.

Petroleum Standards Revised, ASA Approves Changes

ACTION by the Sectional Committee on Petroleum Products and Lubricants brought approval recently by the American Standards Association of changes in several petroleum standards. The revisions, which bring the standards up-to-date with technical developments, were acted upon by the sectional committee following recommendations from Committee D-2 on Petroleum Products of the American Society for Testing Materials. The A.S.T.M. has the administrative leadership for the work of the sectional committee, and this committee cooperates closely with A.S.T.M. committee D-2.

Revisions were made in four American Standards and one American Tentative Standard:

Methods of Testing Gas Oils (Z11.26-1938), American Standard

Method of Test for Viscosity by Means of the Saybolt Viscosimeter (Z11.2-1938), American Standard

Method of Test for Distillation of Gasoline, Naphtha, Kerosene, and Similar Petroleum Products (Z11.10-1938), American Standard

Method of Test for Knock Characteristics of Motor Fuels (Z11.37-1938), American Tentative Standard

In addition to the revisions, the ASA approved as American Standard the Method of Test for Color of Refined Petroleum Oil by Means of Saybolt Chromometer (Z11.35-1936), which had gone through a trial period as an American Tentative Standard.

Pending development of substitute methods

now being studied, the ASA withdrew its approval of the Method of Test for Saponification Number (Z11.20-1936) and the Method of Test for Penetration of Greases and Petrolatum (Z11.3-1933).

Separate copies of the revised standards are available from the American Standards Association at 25 cents each.

The 1938 Report of Committee D-2 on Petroleum Products and Lubricants and Methods Relating to Petroleum Products also includes all these standards, as well as other standard tests and specifications for petroleum products. This book, which is a compilation of all standards developed by A.S.T.M. Committee D-2 and includes a summary of this committee's activities, is available from the American Society for Testing Materials, 260 S. Broad Street, Philadelphia, at \$2.00 per copy.

Italians Ask Comment On Draft Standards

The Italian national standardizing body has just issued a draft standard for aircraft tie rods, and a draft on "different particulars for automotive" on which they ask comment and criticism before December 31 from American industry. The draft standards are in Italian. Copies of the two drafts, UNI 0211 and UNI 0210, may be borrowed from the American Standards Association.

ASA Advisory Committee Endorses A.S.T.M. Textile Treatment Projects

The possibility of developing standards for water-resistant or water-retardant processes and fabrics, and for the treatment of fabrics and garments to make them less likely to attack from insects, has been studied by the Advisory Committee on Ultimate Consumer Goods, and action has been taken to endorse and encourage work on these subjects to be undertaken by Committee D-13 on Textile Materials of the American Society for Testing Materials. Standards would include methods of test, definitions, and specifications.

In its study of the problem, a subcommittee of the Advisory Committee held a meeting at which representatives of nearly all the manufacturers of insecticide treatment processes were present, and it was found that manufacturers are as eager for a stabilized basis for developing and

testing insecticides as are consumers and distributors. The subcommittee also learned that A.S.T.M. Committee D-13 on Textile Materials had been considering work in this field. A coordinated approach was proposed, and the program of the A.S.T.M. committee was endorsed by the Advisory Committee. The A.S.T.M. has now announced that the proposed project will be undertaken by Subcommittee B-4 on Bleaching, Dyeing, and Finishing of its Committee D-13.

The Advisory Committee and A.S.T.M. Committee D-13 have both agreed that terms implying absolute conditions, such as "waterproof," "moth proof," etc., should be avoided, and that terms such as "repellent" or "retardant" would be more representative of actual conditions of treated fabrics. The use of such terms, it was agreed, should be based on tests wherever possible.

ASA Committees on Auto Problems Meet During Auto Show Week

Auto Show Week in New York, November 14-19, finds the American Standards Association with meetings of three committees working on problems connected with the automobile industry. The Highway Traffic Standards Committee, which will correlate all the work of the ASA on highway and motor traffic standards, held its organization meeting Wednesday, November 16. The Sectional Committee on Safety Glass met November 15 and the Committee on Standards for the Inspection of Motor Vehicles November 17.

In addition to election of officers, the Highway Traffic Standards Committee considered reports of

projects under its supervision. The Safety Code for Colors for Traffic Signals; the Manual on Uniform Traffic Control Devices for Streets and Highways; on Standards for the Inspection of Motor Vehicles; and on the American Standard for Railroad-Highway Grades Crossing Protection were discussed.

British Standards Institution Proposes Revision on Copper Tubes

A proposed revision of the British Standard Specification on Copper Tubes and their Screw Threads is being circulated by the British Standards Institution for comment and criticism. The BSI will welcome comments from American industry.

The revised specification preserves as much as possible the original specification, consistent with the requirement of an effective revision, the BSI reports. Clauses have been added, however, covering chemical, testing, inspection, testing facilities, and additional tests before rejection. A plus or minus tolerance has been substituted for the minimum thickness values of the original tables.

Copies of the draft revision CE (ME) 9452, may be borrowed from the American Standards Association. Comments should be received by the British Standards Institution before March 29, 1939.

"American Standard Is Engineers' Bible"

"The ASA Code Z9 on factors involved in the fundamental design of exhaust systems is a bible for any engineer who delves into this phase of the work."
—**"Dust Control Through Organized Research,"** by **W. G. Hazard, Owens-Illinois Glass Company, in Safety Engineering, November, 1937.**

William L. Batt to Speak At ASA Annual Meeting

William L. Batt, president of SKF Industries, will be guest speaker at the Annual Meeting of the American Standards Association to be held November 30 at the Astor Hotel, New York. His subject will be "Management and the Public." Mr. Batt has for many years been active in scientific and management circles. He is president of the International Committee of Scientific Management, an organization of the national committees of 17 countries. He has also been active in the work of the Society of Automotive Engineers; is chairman of the Resolutions Committee of the National Association of Manufacturers; and is a member of the American Society of Mechanical

Engineers, having served as its president in 1936. Mr. Batt has been twice decorated by the King of Sweden for his interest and activity in promoting commercial relations between that country and ours.

Mr. Batt's address at the Annual Meeting will be preceded by announcement of new officers of the American Standards Association for 1939 and brief reports of the year's activities by Dana D. Barnum, president, and F. M. Farmer, chairman of the Standards Council. Those wishing to attend the Annual Meeting can make arrangements for the luncheon by writing in advance to the American Standards Association.

Screen Analysis Determines Designation of Coal Sizes

Carrying forward the work of the Sectional Committee on Classification of Coals, the American Standards Association has approved as an American Standard the standard Method for Designating the Size of Coal from its Screen Analysis. This analysis uses results of screen tests, based upon upper and lower limiting screens, to provide a convenient and condensed method for describing the size of coal. The use of such screens gives the percentage of over-size and under-size coal in the particular lot under test.

The new standard was drafted by Subcommittee 7 on Defining Coal Sizes and Friability of the Sectional Committee on Classification of Coals. It was published as a tentative standard in 1936 by the American Society for Testing Materials which is taking the administrative leadership in this work. After the standard had been given a trial as tentative for two years, the sectional committee recommended that it be adopted by the A.S.T.M. as standard, and approved by the ASA as an American Standard. It has been given the designation M 20.3-1938 by the ASA, D 431-38 by the A.S.T.M.

The new standard is now being printed and copies may be ordered from the ASA.

The ASA has also approved a minor change in the American Standard Specifications for Classification of Coals by Rank (now M 20.1-1938; A.S.T.M. D 388-38). The revision consists of a slight change in one of the laboratory methods used in determining the proper rank of the coal under consideration in the accepted table.

Standard Bridges and Roads Would Help in National Defense

"Wisdom of developing standard bridge specifications and minimum requirements for road construction has been impressed upon responsible persons in this country by the recent war scare in Europe, Thomas H. MacDonald, Chief of the U. S. Bureau of Public Roads, declared in an address delivered at the recent convention of the American Association of Motor Vehicle Administrators.

"Good roads and bridges, Mr. MacDonald emphasized, would be invaluable if the United States were forced into war. Congress, he stated, was well aware of these facts when it included in the Federal Motor Carrier Act a statement that its policy was to 'develop and preserve a highway transportation system properly adapted to the needs of the commerce of the United States and of the national defense.'"—*Highway Headlights*, October 31, 1938, published by the National Highway Users Conference.

Farmer Re-Elected Chairman Of Engineering Foundation

F. M. Farmer, vice-president and chief engineer of the Electrical Testing Laboratories, and vice-chairman of the Standards Council of the American Standards Association, was re-elected chairman of the Engineering Foundation recently. The Foundation is the research organization of national engineering societies.

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